REMARKS/ARGUMENTS

Summary of Office action

Claims 1, 3 - 7, 9 - 16, 24, 25 and 27 - 33 are pending in the above referenced application. All of these claims were rejected and the rejections can be summarized as follows:

- Claims 1, 3 - 7, 9 - 16, 24, 25 and 27 - 33 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,701,252 to Brown (the Brown patent); and
- Claims 1, 3, 5, 9, 11 - 14, 16, 24, 25 and 27 - 28 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication 2004/002212 to McGeever, Jr. (the McGeever, Jr. publication).

Summary of Brown patent

As discussed above claims 1, 3 - 7, 9 - 16, 24, 25 and 27 - 33 were rejected as being anticipated by the Brown patent. The Brown patent teaches a system for underwater GPS navigation. The Brown patent describes the invention as "a system that allows navigation by GPS while underwater by locating the antenna above water and the display below water." (see Abstract) An embodiment of the system described in the Brown patent is shown in FIG. 3, which is described as follows:

> FIG. 3 depicts an illustrative embodiment of underwater GPS system 4 suitable for use by a diver while underwater. Underwater GPS system 4 comprises buoy 10, GPS antenna enclosure 40, and GPS display enclosure 43. Buoy 10 is of known construction and

> comprises diver-down flag 11 affixed to pole 12 mounting float 13 and weight 14. The size and weight of float 13 and weight 14 are preselected so that diver-down flag 11 remains above the surface of the water (not shown) and oriented in an upright position. Ordinarily, a diver attaches one end of a line (not shown) to eyebolt 15 and the other end to reel 16 so that he can tow buoy 10 while underwater. (Col 2: Line 61 - Col 3: Line 18)

The description also includes an embodiment that does not involve dragging the buoy along the surface:

> Occasionally, a diver may not wish to tow buoy 10. For instance, he could dive from a boat anchored near a reef and wish to explore the area unencumbered, needing navigation data only when he wishes to return to the boat. In this case, the diver can carry both GPS display enclosure 43 and GPS antenna enclosure 40 to float to the surface whenever he desires navigation data. (Col 3: Lines 39 - 46)

As will be discussed in further detail below, the above description does not include the limitations of claim 1. Claim 1 as amended is as follows:

1. A position location device comprising:

a waterproof housing;

a processor contained within the waterproof housing;

a global positioning system receiver contained within the waterproof housing and connected to the processor; and

a pressure transducer connected to the processor;

wherein the global positioning system receiver includes an antenna;

wherein the pressure transducer is configured to measure depth under water.

Applicants submit that claim 1 is distinct from the devices described in the Brown patent, because claim 1 requires that the processor and global positioning system receiver (including the antenna) are contained within a waterproof housing. The Brown patent teaches that the processor is contained within a first waterproof housing and that the global positioning receiver is contained within a second housing. Therefore, Applicants submit that the Brown patent cannot anticipate claim 1, because it fails to teach a waterproof housing containing a processor and a global positioning system receiver.

Applicants also submit that the Brown patent does not render claim 1 obvious. The Brown patent teaches away from a waterproof housing containing a processor and a global positioning system receiver. Even in embodiments where the global positioning system receiver is carried with the diver under water, the Brown patent teaches the use of independent housings for the processor and the global positioning system receiver. Independent housings are required by Brown, because Brown teaches "the diver can carry both GPS display enclosure 43 and GPS antenna enclosure 40 with him and allow GPS antenna enclosure 40 to float to the surface whenever he desires

navigation data" (Col 3, Lines 42 - 46). The invention of claim 1 does not require the release of the global positioning system receiver under water in order to obtain navigational data.

Claim 3 - 7, 9 and 10 all depend from claim 1. Therefore, Applicants submit that these claims are also valid in light of the teachings of the Brown patent.

Claim 11 contains the limitation that the means for measuring latitude and longitude, the means for measuring time and the means for recording measurements are contained within a waterproof housing. Based upon the discussion above, Applicants submit that the requirement that these elements be contained within a waterproof housing is not taught by the Brown patent. Therefore, claim 11 is allowable. Claims 12 - 16 depend from claim 11 and, therefore, Applicants submit that these claims are also allowable in light of the teachings of the Brown patent.

Claim 24 has been amended to include the limitations of claim 25 and to include the limitation of constructing a dive profile using information recorded in accordance with the method of the invention. The limitations of claim 24 are as follows:

> 24. A method of recording data, comprising:
>
> performing a first measurement of latitude, longitude and time;
>
> recording information indicative of the first measurement of latitude, longitude and time in a memory;
>
> descending underwater;
>
> measuring depth and time;
>
> recording information indicative of the depth and time measurements in the memory;
>
> resurfacing;

performing a second measurement of latitude, longitude and time;

recording information indicative of the second measurement of latitude, longitude and time in the memory; and

constructing a dive profile using information including the latitude, longitude and time recordings obtained when the diver is at the surface and the depth and time measurements obtained when the diver is underwater.

The Brown patent does not teach the limitations of the method of claim 24.

Claims 27 - 33 depend from claim 24, therefore, Applicants submit that these claims are allowable as claims dependent upon an allowable base claim.

The McGeever, Jr. publication

As discussed above, claims 1, 3, 5, 9, 11 - 14, 16, 24, 25 and 27 - 28 were rejected as being anticipated by the McGeever, Jr. publication. The McGeever, Jr. publication teaches a navigation device for an underwater diver. An embodiment of the device is illustrated in FIGS. 1 - 5, which are described in the specification as follows:

[0034] FIG. 1 is a perspective view of an Underwater Diver Navigation Device (50) according to one embodiment of the present invention. The Underwater Diver Navigation Device (50), or navigation device, comprises a SCUBA Flag/Antenna Float (22), or

float, a Signal/Umbilical Cable (23), a GPS Capsule (24), and a GPS Receiver/Display (41).

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[0037] FIG. 2 is a cross-sectional view of the SCUBA Flag/Antenna Float (22) component of the Underwater Diver Navigation Device (50) of FIG. 1. The cross-section of FIG. 2 is taken along line `2` of FIG. 3. A Flotation ring (36) comprised of a standard radial car tire inner tube of sufficient buoyancy as to support the various components of the Underwater Diver Navigation Device (50) of FIG. 1, above the waterline. The size and required inflation of the inner tube is determined through either iterative analysis or the creation of a behavioral model incorporating the weight of the float, and drag of the GPS Capsule (24) and Signal/Umbilical Cable (23), of FIG. 1.

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[0042] The Watertight Module (34) may, for example, be comprised of commercially available equipment such as the Otter Box, manufactured by Otter Products LLC, of Colorado. The Otter Box is housing comprised of fiberglass reinforced ABS resin housing and a clear acrylic lid separated by a closed cell neoprene o-ring, creating a watertight seal between the lid and the housing. A Rubber Cable Pass-through (55) is mounted in one side of the Watertight Module (34) allowing for a watertight seal between a Cable-reel/Antenna Cable (26) and the Watertight Module

(34). The Watertight Module (34) houses a GPS Antenna (32) and a GPS Antenna Power Supply Module (28).

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[0057] Also shown in FIG. 5 is the GPS Receiver/Display (41), or GPS Receiver. The GPS Receiver (41) is comprised of a handheld, off-the-shelf, Global Positioning System receiver. The GPS Receiver (41) may, for example, be comprised of commercially available equipment such as the GlobalMap 100, manufactured by Lowrance Electronics, Inc., of Tulsa, Okla. The GlobalMap 100 is a handheld, 12-Channel GPS receiver. The GlobalMap 100 has a built-in 160.times.104 pixel Liquid Crystal Display (LCD) for viewing plotted waypoints and computer downloaded waterway charts.

The McGeever, Jr. publication is similar to the Brown patent in that it does not teach a housing including a processor and a global positioning system receiver (including an antenna). The antenna is located remote from the global positioning receiver in an independent housing. Therefore, the McGeever, Jr. publication cannot anticipate claims 1, 3, 5, 9, 11 - 14 and 16. In addition, the McGeever, Jr. publication does not teach the presence of a pressure transducer connected to the processor.

The McGeever, Jr. publication does contain the following teaching regarding combining the GPS capsule and the GPS Receiver/Display into a single unit (as opposed to having the GPS Receiver/Display 41 separately packaged and then contained within the GPS capsule cover 45 as is shown in FIG. 5):

[0095] For example the SCUBA Flag/Float can be made of differing buoyant materials of varying colors, the GPS Capsule as well as the GPS Receiver/Display can be made smaller and more compact. The GPS Capsule and GPS Receiver/Display can be incorporated into a single self-contained water and pressure proof unit. The GPS Capsule and GPS Receiver/Display can be incorporated into an integrated SCUBA first-stage umbilical gauge set. The Signal/Umbilical Cable can be made of varying lengths and diameters.

However, Applicants submit that the McGeever, Jr. patent does not teach housing the global positioning receiver including its antenna in the same housing as the processor. In addition, it does not teach the connection of a pressure transducer to the processor.

Claim 24 has been amended to include the limitations of claim 25 and to include the limitation of constructing a dive profile using information recorded in accordance with the method of the invention. The limitations of claim 24 are as follows:

24. A method of recording data, comprising:

performing a first measurement of latitude, longitude and time;

recording information indicative of the first measurement of latitude, longitude and time in a memory;

descending underwater;

measuring depth and time;

recording information indicative of the depth and time measurements in the memory;

resurfacing;

performing a second measurement of latitude, longitude and time;

recording information indicative of the second measurement of latitude, longitude and time in the memory; and

construct a dive profile using information including the latitude, longitude and time recordings obtained when the diver is at the surface and the depth and time measurements obtained when the diver is underwater.

The Brown patent does not teach the limitations of the method of claim 24.

Claims 27 - 33 depend from claim 24, therefore, Applicants submit that these claims are allowable as claims dependent upon an allowable base claim.

Conclusion

Applicants respectfully submit that for the reasons state above, the currently pending claims are allowable. Therefore, Applicants request the prompt issuance of a Notice of Allowance.

If Applicants' counsel can be of assistance, please contact them at the number provided below.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By _____

David J. Bailey
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